

REMARKS

The foregoing amendments and following remarks are responsive to the final Office Action dated September 26, 2011.

Summary of Office Action

The Examiner indicated that Claim 8 is directed to an invention that lacks unity with the invention originally claimed, and that Claim 8 was withdrawn from consideration as being directed to a nonelected invention. The drawings were objected to under 37 C.F.R. § 1.83(a) because they do not show every feature of the invention specified in the claims. Claim 7 was objected to because of an informality related to the wording of the claim. Claim 7 was also rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Claims 1, 2, 4, 5 and 7 were rejected under 35 U.S.C. § 102(b) as being anticipated by the Murata et al. reference (U.S. Patent No. 6,017,213). Claim 6 was rejected under 35 U.S.C. § 102(b) as being anticipated by, or in the alternative, under 35 U.S.C. § 103(a) as obvious over the Murata et al. reference.

Response to Drawing Objection

The Examiner objected to the drawings because they do not show the combination of the blaster (claim 7) used with the discharge hole in the inner tube (claim 2). Accordingly, Applicant has amended Claim 7 by deleting the reference to Claim 2. As such, the drawing objection is believed to be overcome.

Response to Claim Objections

The Examiner objected to Claim 7 because the phrase "said the high-temperature combustion gas" should be "the high-temperature combustion gas" or "said high-temperature combustion gas."

By this response, Applicant has amended Claim 7 to recite "the high-temperature combustion gas" as instructed by the Examiner.

Response to 35 U.S.C. §112 Rejections

Claim 7 was rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. In particular, there is insufficient antecedent support for the phrase "the head." Accordingly, Applicant has amended "the head" to "a head," and thus, the Examiner's rejection under 35 U.S.C. §112, second paragraph is believed to be overcome.

Response to 35 U.S.C. §102/103 Rejections

I. Amended Claim 1

By this response, Claim 1 has been amended to emphasize novel aspects of the combustion gas extraction probe recited therein. In particular, the amendment to Claim 1 is directed toward emphasizing that the fluid flow of the low-temperature gas reaches the centermost portion of the high-temperature combustion gas.

The combustion gas extraction probe recited in amended claim 1 is operative to extract a high-temperature combustion gas while cooling the high-temperature combustion gas with a low-temperature gas. The low-temperature gas flows in a direction that is substantially perpendicular to the high-temperature combustion gas and is toward a center of a flow of the high-temperature combustion gas such that the low-temperature gas reaches the centermost portion of the high temperature combustion gas for mixed cooling.

In Applicant's amendment dated September 18, 2011, Applicant argued that the invention recited in Claim 1 was distinguishable from the cited Murata et al. reference because Murata's cooling air only reaches peripheral portions of the inner passageway, and thus, does not reach the central portion thereof.

The Examiner argued that "the claim does not require the gas to reach the centermost portion...instead, the claim only requires the gas to reach 'a central portion' of the high-temperature combustion gas."

By this response, Applicant has amended Claim 1 to now recite that the low-temperature gas reaches the centermost portion of the high-temperature gas for mixed

cooling, which is distinguishable from the Murata et al. reference, which only discloses cooling air along peripheral portions of the inner passageway.

Furthermore, the Examiner contends that the recitation of cooling air reaching the center portion is seen to be a function of the flow characteristics of the cooling air relative to the high-temperature gas, and that the structure of the probe is seen at least as being capable of achieving the result that the low-temperature gas reaches a central portion of the high-temperature gas by increasing the velocity of the low-temperature gas.

However, Applicant respectfully disagrees. In particular, the Murata et al. reference discloses that the diameters of the holes which the cooling airs CA are introduced are 8-10 mm. Thus, given the small diameters of the holes, it is near impossible that the cooling airs CA will reach the centermost portion of the high-temperature combustion gas. This is supported by Figures 5 and 6 of the Murata et al. reference, which includes arrows depicting the flow path of the cooling airs CA, such that the cooling air arrows do not reach the centermost portion of the high-temperature combustion gas.

Therefore, for the reasons advanced above, Applicant submits that independent Claim 1 is allowable, as are Claims 2 and 4-7 as being dependent upon an allowable base claim.

Conclusion

On the basis of the foregoing, Applicant respectfully submits that the stated grounds of rejection have been overcome, and that the Claims are now in condition for allowance. An early Notice of Allowance is therefore respectfully requested. Should the Examiner have any questions, the Examiner is invited to contact Applicant's counsel at the telephone number listed below.

If any additional fee is required, please charge Deposit Account Number 19-4330.

Respectfully submitted,

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